

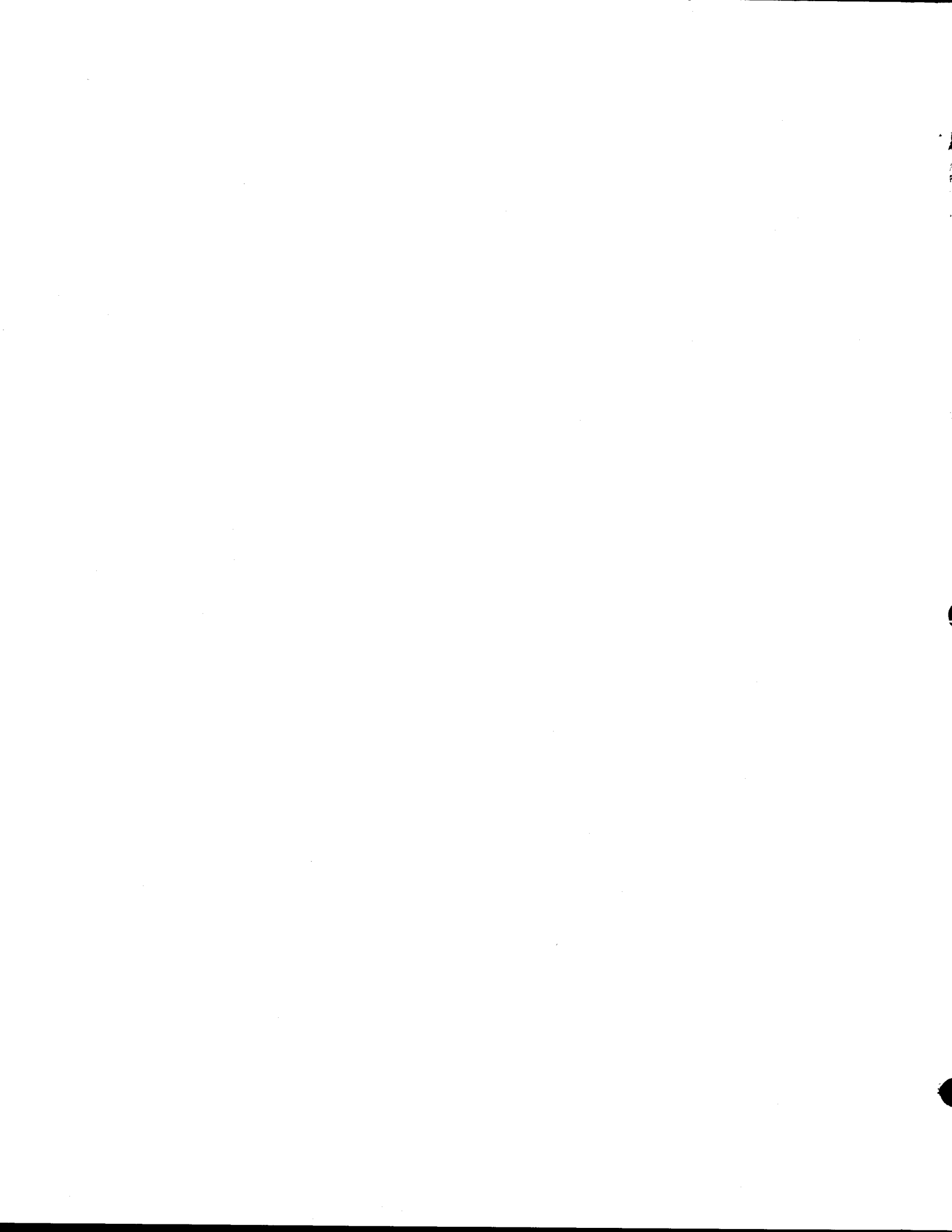


5th PRIORITY PROJECT LIST REPORT

PREPARED BY:

LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION
TASK FORCE

October 1996



Coastal Wetlands Planning, Protection and Restoration Act

5th Priority Project List Report

Volume 1 Main Report

Volume 2 Appendices

 Appendix A..... Summary and Complete Text of the CWPPRA

 Appendix B Wetland Value Assessment Methodology and Community Model

 Appendix C..... Engineering

 Appendix D..... Economics

 Appendix E..... Wetland Value Assessments

 Appendix F..... Public Support for Candidate Projects

 Appendix G. Status of Projects from Previous Priority Project Lists



Coastal Wetlands Planning, Protection and Restoration Act

5th Priority Project List Report Table of Contents

	<u>Page</u>
INTRODUCTION.....	1
Study Authority	1
Study Purpose	1
Project Area	2
Study Process	2
The Interagency Planning Groups	3
The Citizen Participation Group	3
Involvement of the Academic Community	4
Public Involvement	4
FORMULATION PROCESS FOR THE PRIORITY PROJECT LIST.....	5
Introduction	5
Identification of Projects	5
Selection of Candidate Projects	6
Evaluation of Candidate Projects	14
Benefit Analysis (Wetland Value Assessment)	14
Design and Cost Analysis	15
Economic Analysis	16
Description of Candidate Projects	19
Lake Borgne Shore Protection (PPO-a/g)	21
Bonnet Carré Outfall Management (XPO-54)	23
Marsh Creation at Bayou Chevee (XPO-69)	25
Marsh Creation with Dedicated Dredging--Wills Point (XBS-17)	27
Pass a Loutre Sediment Mining (PMR-8)	29
Channel Armor Gaps West (XMR-10b)	31
Myrtle Grove Siphon (XBA-48b)	33
Naomi Siphon Outfall Management (BA-3c)	35
Barataria Bay Waterway Bank Protection--East (PBA-12b)	37
Marsh Creation with Dedicated Dredging--Jesuit Bend (XBA-73)	39
Bayou Lafourche Siphon (PBA-20)	42
Grand Bayou/GIWW Freshwater Diversion (TE-10)	45
East Timbalier Island Barrier Island Restoration (XTE-45)	47
Isles Dernieres East Trinity, New Cut Closure (PTE-15b(iv))	49
Bayou De Cade Hydrologic Restoration (PTE-26a)	51
Marsh Creation South of Falgout Canal (XTE-69)	53
Point Chevreuil Shoreline Protection (XAT-3)	55
Oaks/Avery Canals Hydrologic Restoration (PTV-10/XTV-25)	57
Vegetative Plantings in the Chenier Plain (XTV-30)	63
Little Vermilion Bay Sediment Trapping (PTV-19)	65
Marsh Island Hydrologic Restoration and Marsh Creation (TV-5/7) ..	67
Pecan Island Terracing (XME-22)	69
Freshwater Bayou Bank Stabilization (XME-29)	71
Black Bayou Culverts (CS-16)	73
Sweet Lake/Willow Lake Shoreline Protection (CS-11b)	75
Raccoon Island Breakwaters Demonstration (PTE-15b(ii))	77
Wave Dissipation Demonstration at Marsh Island (XTV-30)	79
Wave Dissipation Demonstration at Freshwater Bayou	81
Clovelly Farms Diversion Demonstration	83
Empire Lock Operational & Maintenance Dredging Modification Demo .	85
Vegetative Plantings on Raccoon Island Demonstration	86
North Line Canal Structure (XCS-46)	87
Homeplace Siphons (BA-17b)	87
Point Au Fer Reef Demonstration	87

Coastal Wetlands Planning, Protection and Restoration Act

5th Priority Project List Report
Table of Contents
(continued)

	<u>Page</u>
Project Selection Process	88
Ranking Criteria	88
Rationale for Selection	93
Selected Projects	96
Naomi Siphon Outfall Management (BA-3c)	97
Little Vermilion Bay Sediment Trapping (PTV-19)	101
Grand Bayou/GIWW Freshwater Diversion (TE-10)	105
Bayou Lafourche Siphon (PBA-20)	113
Myrtle Grove Siphon (PBA-48b)	121
Sweet Lake/Willow Lake Shoreline Protection (CS-11b)	125
Marsh Creation with Dedicated Dredging at Bayou Chevee (XPO-69)	129
Freshwater Bayou Bank Stabilization (XME-29)	133
Raccoon Island Breakwaters Demonstration	137

Coastal Wetlands Planning, Protection and Restoration Act

5th Priority Project List Report
Table of Contents
(continued)

List of Tables

No.	Title	Page
1	Membership of the Citizen Participation Group	3
2	Candidate Project Selection Meetings	6
3	Ranking of Nominees for the Pontchartrain Basin	8
4	Ranking of Nominees for the Breton Sound Basin	9
5	Ranking of Nominees for the Mississippi River Delta Basin	9
6	Ranking of Nominees for the Barataria Basin	10
7	Ranking of Nominees for the Terrebonne Basin	11
8	Ranking of Nominees for the Atchafalaya Basin	12
9	Ranking of Nominees for the Teche/Vermilion Basin	12
10	Ranking of Nominees for the Mermentau Basin	13
11	Ranking of Nominees for the Calcasieu/Sabine Basin	20
12	Candidate Projects for the 5 th Priority Project List	18
13	Ranking Criteria	88
14	Candidate Project Ranking	92
15	Project Categorization Based on Systemic Effects	94
16	5 th Priority Project List	95
17	Possible Schedule of Allocations for Phased Projects	95

List of Figures

No.	Title	Page
1	GIWW Discharge vs. Atchafalaya River Discharge	107
2	Predicted Surface Water Elevations Along Bayou Lafourche (Profile)	116
3	Predicted Surface Water Elevations Along Bayou Lafourche at Donaldsonville (Cross Section)	117
4	Predicted Surface Water Elevations Along Bayou Lafourche at Napoleonville (Cross Section)	118
5	Predicted Surface Water Elevations Along Bayou Lafourche at Thibodaux (Cross Section)	119

List of Plates

Plate 1	Candidate Location Map
---------------	------------------------

List of Appendices

Appendix A.....Summary and Complete Text of the CWPPRA
Appendix B.....Wetland Value Assessment Model Appendix
Appendix C.....Engineering Appendix
Appendix D.....Economics Appendix
Appendix E.....Wetland Value Assessment Results Appendix
Appendix F.....Public Support for Candidate Projects
Appendix G.....Status of Projects from Previous Priority Project Lists

Coastal Wetlands Planning, Protection and Restoration Act
5th Priority Project List Report

INTRODUCTION

The State of Louisiana contains 40 percent of the Nation's coastal wetlands, but is experiencing 80 percent of the Nation's coastal wetland loss. The widespread and complex nature of the coastal wetland loss problem, coupled with the diversity of agencies involved and numerous alternatives proposed, has led many in Federal, state, and local government, as well as the general public, to the conclusion that a comprehensive approach is needed. The Coastal Wetlands Planning, Protection and Restoration Act (Public Law 101-646) was signed into law by President Bush on November 29, 1990, to address the need for a comprehensive approach to this significant environmental problem.

This report documents the implementation of Section 303(a) of the cited legislation.

STUDY AUTHORITY

Section 303(a) of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA, or the Breaux-Johnston Act), displayed in Appendix A, directs the Secretary of the Army to convene the Louisiana Coastal Wetlands Conservation and Restoration Task Force to:

. . . initiate a process to identify and prepare a list of coastal wetlands restoration projects in Louisiana to provide for the long-term conservation of such wetlands and dependent fish and wildlife populations in order of priority, based upon the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing coastal wetlands, taking into account the quality of such coastal wetlands, with due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration.

STUDY PURPOSE

The purpose of this study effort was to prepare the 5th Priority Project List (PPL) and transmit the list to Congress, as specified in Section 303(a)(3) of the CWPPRA. Section 303(b) of the act calls for preparation of a comprehensive restoration plan for coastal Louisiana; that effort was completed in November 1993, with the submission of the Louisiana Coastal Wetlands Restoration Plan.

PROJECT AREA

Plate 1 is a map which delineates the Louisiana coastal zone. The entire coastal area, which comprises all or part of 20 Louisiana parishes, is considered to be the CWPPRA project area. To facilitate the study process, the coastal zone was divided into nine hydrologic basins, as shown on the map.

STUDY PROCESS

The Interagency Planning Groups.

Section 303(a)(1) of the CWPPRA directs the Secretary of the Army to convene the Louisiana Coastal Wetlands Conservation and Restoration Task Force, to consist of the following members:

- the Secretary of the Army (Chairman)
- the Administrator, Environmental Protection Agency
- the Governor, State of Louisiana
- the Secretary of the Interior
- the Secretary of Agriculture
- the Secretary of Commerce.

The State of Louisiana is a full voting member of the Task Force except for selection of the Priority Project List [Section 303(a)(2)], as stipulated in President Bush's November 29, 1990, signing statement (Appendix A). In addition, the State of Louisiana may not serve as a "lead" Task Force member for design and construction of wetlands projects of the priority project list.

In practice, the Task Force members named by the law have delegated their responsibilities to other members of their organizations. For instance, the Secretary of the Army authorized the commander of the Corps' New Orleans District to act in his place as chairman of the Task Force.

To assist it in putting the CWPPRA into action, the Task Force established the Technical Committee and the Planning and Evaluation Subcommittee. Each of these bodies contains the same representation as the Task Force--one member from each of the five Federal agencies and one from the State. The Planning and Evaluation Subcommittee is responsible for the actual planning of projects and preparation of the November 1993 comprehensive restoration plan, as well as the other details involved in the CWPPRA process (such as development of schedules, budgets, etc.); the subcommittee makes recommendations to the Technical Committee and lays the groundwork for decisions which will ultimately be made by the Task Force. The Technical Committee reviews all materials prepared by the subcommittee, makes appropriate revisions, and provides recommendations to the Task Force. The Technical Committee operates at an intermediate level between the planning details considered by the subcommittee and the policy matters dealt with by the Task Force, and often formalizes procedures and formulates policy for the Task Force.

The Planning and Evaluation Subcommittee established several working groups to evaluate projects for priority project lists and the restoration plan. The Environmental Work Group was charged with estimating the benefits (in terms of wetlands created,

protected, enhanced, or restored) associated with various projects. The Engineering Work Group reviewed project cost estimates for consistency. The Economic Work Group performed the economic analysis which permitted comparison of projects on the basis of their cost effectiveness. The Monitoring Work Group established a standard procedure for monitoring of CWPPRA projects and developed a monitoring cost estimating procedure based on project type.

The Citizen Participation Group.

The Task Force also established a Citizen Participation Group to provide general input from the diverse interests across the coastal zone: local officials, landowners, farmers, sportsmen, commercial fishermen, oil and gas developers, navigation interests, and environmental organizations. The Citizen Participation Group was formed to promote citizen participation and involvement in formulating priority project lists and the restoration plan. The group meets at its own discretion, but may at times meet in conjunction with other CWPPRA elements, such as the Technical Committee. The purpose of the Citizen Participation Group is to maintain consistent public review and input into the plans and projects being considered by the Task Force and to assist and participate in the public involvement program. The membership of the Citizen Participation Group is shown in Table 1.

Table 1

Membership of the Citizen Participation Group

Gulf Coast Conservation Association	Concerned Shrimpers of America
Coalition to Restore Coastal Louisiana	Gulf Intracoastal Canal Association
Lake Pontchartrain Basin Foundation	Louisiana Association of Soil and Water Conservation Districts
Louisiana Farm Bureau Federation, Inc.	Louisiana Landowners Association
Louisiana League of Women Voters	Louisiana Nature Conservancy
Louisiana Oyster Growers and Dealers Association	Louisiana Wildlife Federation, Inc.
Midcontinent Oil and Gas Association	New Orleans Steamship Association
Oil and Gas Task Force (Regional Economic Development Council)	Police Jury Association of Louisiana
Organization of Louisiana Fishermen	

Involvement of the Academic Community.

While the agencies sitting on the Task Force possess considerable expertise regarding Louisiana's coastal wetlands problems, the Task Force recognized the need to incorporate another invaluable resource: the state's academic community. The Task Force therefore retained the services of the Louisiana Universities Marine Consortium (LUMCON) to provide scientific advisors to aid the Environmental Work Group in performing Wetland Value Assessments. This Academic Assistance Group also assists the Task Force in carrying out the two feasibility studies authorized by the Task Force in March 1995: the Louisiana Barrier Shoreline study (managed by the Louisiana Department of Natural Resources) and the Mississippi River Sediment, Nutrient, and Freshwater Redistribution study (managed by the Corps of Engineers).

Public Involvement.

Even with its widespread membership, the Citizen Participation Group cannot represent all of the diverse interests affected by Louisiana's coastal wetlands. The CWPPRA public involvement program provides an opportunity for all interested parties to express their concerns and opinions and to submit their ideas concerning the problems facing Louisiana's wetlands. The Task Force has held at least six public meetings each of the last four years to obtain input from the public. In addition, the Task Force distributes a semiannual newsletter with information on the CWPPRA program and on individual projects.

FORMULATION PROCESS FOR THE PRIORITY PROJECT LIST

INTRODUCTION

The planning effort associated with the CWPPRA initially proceeded simultaneously along two tracks. Section 303(b) of the act calls for the development of a comprehensive restoration plan for Louisiana's coastal wetlands. This long term plan was developed over a three-year period, with the report (the *Louisiana Coastal Wetlands Restoration Plan*) completed in November 1993. Section 303(a), on the other hand, deals with projects which can be implemented within a short period of time. This section requires that any project selected for a priority project list be substantially complete within five years of its appearance on a list. The intent of this section is to provide a rapid response to the loss of coastal wetlands. The first Priority Project List was to be submitted within one year of enactment of the CWPPRA, with subsequent lists to be prepared annually.

Section 303(a) actually requires that priority project lists be submitted only until such time as the comprehensive restoration plan called for in section 303(b) has been prepared. Projects can then be drawn from the comprehensive plan. In practice, however, the Task Force has found the annual priority list process to be an effective means of developing projects and has continued to use that process--without the five-year implementation limit.

The one-year time limit associated with developing a priority project list necessitated a deviation from the usual plan formulation process. Rather than beginning with a clean slate, it was preferable to begin with projects which were already developed to some degree--if possible, projects on which some planning had already been done. The projects on the Priority Project List submitted in November 1991 fell into this category.

Preparation of subsequent lists involved somewhat more lead time than did the first list and employed a more traditional approach. This section describes the process by which the 5th Priority Project List was developed.

Development of the 5th list was a three-stage process: selection of candidate projects, evaluation of candidate projects, and selection of the priority project list.

IDENTIFICATION OF PROJECTS

Projects considered for the 5th list were derived from the *Louisiana Coastal Wetlands Restoration Plan*. In the restoration plan, an identification number was assigned to each project to help keep track through the screening and evaluation process. Each project received a two-letter code to identify its basin; these codes are shown below.

PO	Pontchartrain	AT	Atchafalaya
BS	Breton Sound	TV	Teche/Vermilion
MR	Mississippi River Delta	ME	Mermentau
BA	Barataria	CS	Calcasieu/Sabine
TE	Terrebonne		

Projects which were originally part of the State's Coastal Wetlands Conservation and Restoration Plan use these two letters followed by a number. Projects which were derived from the scoping meetings held in the fall of 1991 are identified by a "P" ("public") preceding the two-letter code (e.g., PPO-52, PTV-18).

Plan formulation meetings held from February through May 1992 were an additional source of projects for consideration for priority project lists. Projects which were proposed during and after these meetings are identified with an "X" (e.g., XTE-41).

The CWPPRA provides for revision of the comprehensive restoration plan as appropriate, and the Task Force considers such revisions on an annual basis. Some projects which have been added to the plan are not specific to one project area, but rather may be applied at any appropriate site on a coastwide basis. These projects are designated "CW," followed by a numerical identifier.

SELECTION OF CANDIDATE PROJECTS

Candidate projects are those which the Task Force will evaluate in some detail in order to choose a priority project list. The Planning and Evaluation Subcommittee selects a number of candidate projects as the first step in priority project list development.

In May 1995 the Planning and Evaluation Subcommittee held a series of meetings for the selection of candidate projects. The meetings were held according to the following schedule.

Table 2
Candidate Project Selection Meetings

Location	Date	Hydrologic Basins
New Orleans	May 16	Pontchartrain, Mississippi River Delta, and Breton Sound
Thibodaux	May 18	Barataria, Terrebonne, and Atchafalaya
Abbeville	May 22	Teche-Vermilion and Mermentau
	May 23	Calcasieu/Sabine

The public was invited to participate in these meetings, not only by commenting on projects nominated by the CWPPRA agencies, but also by nominating projects of their own. The sole

requirement for nomination was that a project must be listed in the *Louisiana Coastal Wetlands Restoration Plan*. The subcommittee selected the candidate projects from among the nominees at each of the three meetings.

The number of candidate projects to be taken from each basin was determined in advance by the Planning and Evaluation Subcommittee (at a meeting on May 2, 1995). The subcommittee considered the acres of wetlands in each basin, the rate of loss in each basin, and the number of Breaux-Johnston Act projects already approved for each basin. The number of candidates the subcommittee agreed to select from each basin is shown below.

Pontchartrain	2	Atchafalaya	1
Breton Sound	2	Teche/Vermilion	2
Mississippi River	1	Mermentau	2
Barataria	4	Calcasieu/Sabine	2
Terrebonne	4		

Selection of the candidates was accomplished by having each agency rank the nominees, assigning the most points to what it regarded as the most worthwhile project. The projects awarded the most points in each basin were then selected as candidate projects, with the number of projects varying as shown above. The rankings for the nominees in each basin are displayed in tables 3 through 11.

In all, 22 candidate projects were chosen to be evaluated in detail; these were the projects from which the 5th Priority Project List would be selected. In addition, the Planning and Evaluation Subcommittee decided 11 demonstration projects (some proposed by the agencies, some proposed by the public) merited consideration for the 5th Priority Project List. By Task Force policy, the total cost of demonstration projects for any list is generally limited to about \$2 million.

A lead federal agency was then assigned to each candidate project. The lead agency was responsible for developing the project more fully and producing designs and cost estimates. The lead agencies furnished design information to the Environmental Work Group, which performed a Wetland Value Assessment for each candidate project. The section entitled "Evaluation of Candidate Projects" summarizes the information developed by the lead agencies in this process.

Table 3
 Ranking of Nominees for the
 Pontchartrain Basin

Project	No.	Sponsor	COE	EPA	DNR	Points Awarded				Total
						NRCS	NMFS	FWS		
LaBranche East	PPO-9	COE	4	2		2				8
† Bayou Chevee Marsh Restoration	XPO-69	COE	5	1	5	1			3	18
† Bonnet Carre' Outfall Management	XPO-54	NMFS	3	5	2				5	19
Alligator Point Hydrologic Restoration	PO-15	NRCS			3	4			5	12
† Lake Borgne Shore Protection	PPO-2a/g	NRCS	2	3	4	3			2	18
MR-GO Marsh Creation	FPO-38a	NRCS				5			2	8
	XPO-38	St B								0
Lake Borgne Shore Protection	PPO-2b	St B			1				1	2
Lake Borgne Shore Protection	PPO-2c	St B								0
Lake Borgne Shore Protection	PPO-2d	St B	1	4						5
Lake Borgne Shore Protection	PPO-2e	St B								0
Lake Borgne Shore Protection	PPO-2f	St B								0
MR-GO Marsh Creation	XPO-72	St B								0
MR-GO Bar Wetland Creation	XPO-73	St B								0
Bayou Bienvenue Marsh	XPO-74	St B								0
Lake Borgne at Bayou Dupre	XPO-95	St B								0
B. LaLoutre-MRGO Wetlands	XPO-96	St B								0
Artificial Barrier Islands	XPO-66	St B								0
† Artificial Reef (Seagrass)	XPO-98	PC								Demo
L. Borgne Land Bridge Shore Protection	PPO-2x	NO								0

Projects marked with a "†" were accepted as candidate projects.

COE: Corps of Engineers
 EPA: Environmental Protection Agency
 DNR: Department of Natural Resources
 NRCS: Natural Resources Conservation Service
 NMFS: National Marine Fisheries Service
 FWS: United States Fish and Wildlife Service

St B: St. Bernard Parish
 PC: Private Citizen
 NO: City of New Orleans

Table 4
 Ranking of Nominees for the
 Breton Sound Basin

Project	No.	Sponsor	Points Awarded					Total	
			COE	EPA	DNR	NRCS	NMFS		FWS
† White's Ditch Siphon and Management	BS-4c	NMFS*	3	4	5	3	5	4	24
† Marsh Restoration at Wills Point	XBS-17	COE*	4	5	4	4	3	3	23
Mississippi River Diversion at Bohemia	BS-1a/b	NMFS	2	3	3	2	4	5	19
Marsh Restoration at Ft. St. Philip	XBS-16	COE	5	2	2	1	1	2	13
Bayou Lamoque Outfall Management	BS-5	NRCS	1	1	1	5	2	1	11

Table 5
 Ranking of Nominees for the
 Mississippi River Delta Basin

Project	No.	Sponsor	Points Awarded					Total	
			COE	EPA	DNR	NRCS	NMFS		FWS
Denny's Bay Diversion	XMR-15	FWS							
Benny's Bay Diversion	PMR-5	COE							
† Channel Armor Gap West	XMR-10b	COE							
† Boudin Bags Bank Protection		NRCS							Demo
† Empire Lock Operation Modification		DNR							Demo

Projects in this basin were not ranked; by vote of the Planning and Evaluation Subcommittee, the Channel Armor Gap project, XMR-10b, was selected.

* Co-sponsored with DNR

Projects marked with a "†" were accepted as candidate projects.

COE: Corps of Engineers
 EPA: Environmental Protection Agency
 DNR: La. Department of Natural Resources
 NRCS: Natural Resources Conservation Service
 NMFS: National Marine Fisheries Service
 FWS: United States Fish and Wildlife Service

Table 6
 Ranking of Nominees for the
 Barataria Basin

Project	No.	Sponsor	Points Awarded							Total
			EPA	FWS	DNR	COE	NRCS	NMFS		
† Dedicated Dredging at Jesuit Bend	XBA-73	DNR	6	3	4	1	7	4	25	
Empire Lock Operating Procedure Mod	XBA-74	DNR	1	7	5	2	5	3	23	
† Myrtle Grove Siphon	PBA-48a	NMFS*	4	5	6	7	6	6	34	
† City Price Freshwater Div (Homeplace)	BA-17b	NMFS	3	4	2	6	3	7	25	
Nairn Marsh Creation	XBA-50	EPA	5	2	1	5	1	1	15	
† Bayou Lafourche Diversion	PBA-20	EPA*	7	6	7	4	4	5	33	
Dedicated Dredging East of the Pen	XBA-75	COE	2	1	3	3	2	2	13	
† Clovelly Farms Diversion		NRCS							Demo	

* Co-sponsored with DNR

Projects marked with a "†" were accepted as candidate projects.

COE: Corps of Engineers
 EPA: Environmental Protection Agency
 DNR: La. Department of Natural Resources
 NRCS: Natural Resources Conservation Service
 NMFS: National Marine Fisheries Service
 FWS: United States Fish and Wildlife Service

Demo: Clovelly Farms Diversion (NRCS)

Table 7
 Ranking of Nominees for the
 Terrebonne Basin

Project	No.	Sponsor	Points Awarded							Total
			EPA	FWS	NMFS	COE	NRCS	DNR		
† Barrier Island Restoration	PTE-15b(iv)	EPA*	7	2	7	4	2	7	29	
with Ship Shoal Material	TE-11a									
† Timbalier Island Restoration	XTE-45	NMFS	5	4	6	3	3	5	26	
† Bayou DeCade Hydrologic Restoration	PTE-26a	NRCS	3	7	4	2	7	2	25	
Bayou LaCarpe Hydro Rest	TE-7d(i)	NRCS	1	5	1	1	5	1	14	
South Falgout Canal Freshwater Intro	XTE-55a	FWS	2	6	3	6	4	3	24	
† Dedicated Dredging South of Falgout Canal	XTE-69	COE	6	3	5	7	1	4	26	
East Timbalier Island Restoration	XTE-45/67c	Lfrch	4	1	2	5	6	6	24	
† Vegetative Plantings on Raccoon Island		NRCS							Demo	

Projects marked with a "+" were accepted as candidate projects.

COE: Corps of Engineers

EPA: Environmental Protection Agency

DNR: La. Department of Natural Resources

Lfrch: Lafourche Parish

NRCS: Natural Resources Conservation Service

NMFS: National Marine Fisheries Service

FWS: United States Fish and Wildlife Service

Table 8
 Ranking of Nominees for the
 Atchafalaya Basin

Project	No.	Sponsor	Points Awarded						Total
			COE	EPA	DNR	NRCS	NMFS	FWS	
† Point Chevreuil Shore Protection	XAT-3	NRCS							
† Point au Fer Reef Reconstruction	XAT-11	PC							Demo

By vote of the Planning and Evaluation Subcommittee, the Point Chevreuil Shore Protection project was named a candidate project and the Point au Fer Reef project was accepted as a demonstration project.

Table 9
 Ranking of Nominees for the
 Teche-Vermillion Basin

Project	No.	Sponsor	Points Awarded						Total
			COE	EPA	DNR	NRCS	NMFS	FWS	
† Vegetative Plantings	XIV-30	DNR	1	3	6	3	4	6	23
Avery Canal Shoreline Prot	PV-10	NRCS	5	5	1	6	2	4	23
Salt Point North Shore Prot	TV-4s	NRCS	4	4	2	1	1	2	14
† Freshwater Bayou Hydro Restoration	XIV-27	NRCS	3	6	3	2	3	5	22
† Oaks Canal Hydro Restoration	XIV-25	NRCS	6	2	5	4	6	3	26
Weeks Bay Shoreline Prot	TV-10	PC	2	1	4	5	5	1	18

Demonstration Projects
 Freshwater Bayou Bank Protection (Tire Structure)
 Marsh Island Demonstration

Projects marked with a "†" were accepted as candidate projects.

COE: Corps of Engineers
 EPA: Environmental Protection Agency
 DNR: La. Department of Natural Resources
 PC: Private Citizen
 NRCS: Natural Resources Conservation Service
 NMFS: National Marine Fisheries Service
 FWS: U.S. Fish and Wildlife Service

Table 10
 Ranking of Nominees for the
 Mermentau Basin

Project	No.	Sponsor	Points Awarded					Total
			EPA	COE	DNR	NRCS	NMFS	
† Mermentau Wtr Level Cntrl	PME-7	DNR						
† Pe. an Island Terracing	XME-22	NMFS						
† Freshwater Bayou Hydro Restoration	XME-29	NRCS						

Only three projects were nominated. As there is some uncertainty concerning the availability of sufficient information to evaluate the PME-7 project, and because the XME-22 project has been previously evaluated, all three projects were accepted as candidates for this basin.

Table 11
 Ranking of Nominees for the
 Calcasieu/Sabine Basin

Project	No.	Sponsor	Points Awarded					Total
			EPA	COE	DNR	NRCS	NMFS	
† North Line Canal Hydro Restoration	XCS-53	COE	1	1	3	4	5	19
Alkali Ditch HR	XCS-46	COE	4	2	1	5	4	18
† Sweet and Willow Lakes HR	CS-11b	NRCS	5	4	5	3	1	21
Northwest Gum Cove HR	XCS-48	NRCS	3	3	4	1	3	15
Oyster Bayou HR	PCS-12/18	NRCS	2	5	2	2	2	17

Projects marked with a "†" were accepted as candidate projects.

COE: Corps of Engineers
 EPA: Environmental Protection Agency
 DNR: La. Department of Natural Resources
 PC: Private Citizen
 NRCS: Natural Resources Conservation Service
 NMFS: National Marine Fisheries Service
 FWS: U.S. Fish and Wildlife Service

EVALUATION OF CANDIDATE PROJECTS

Benefit Analysis (Wetland Value Assessment)

The Wetland Value Assessment (WVA) methodology is a quantitative, habitat-based assessment methodology developed for use in prioritizing project proposals submitted for funding under the Breaux-Johnston Act. The WVA quantifies changes in fish and wildlife habitat quality and quantity that are projected to be brought about as a result of a proposed wetland enhancement project. The results of the WVA, measured in Average Annual Habitat Units (AAHU's), can be combined with economic data to provide a measure of the effectiveness of a proposed project in terms of annualized cost per AAHU gained.

The WVA was developed by the Environmental Work Group (Group) assembled under the Planning and Evaluation Subcommittee of the CWPPRA Technical Committee; the Group includes members from each agency represented on the CWPPRA Task Force. The WVA was designed to be applied, to the greatest extent possible, using only existing or readily obtainable data.

The WVA has been developed strictly for use in ranking proposed CWPPRA projects; it is not intended to provide a detailed, comprehensive methodology for establishing baseline conditions within a project area. Some aspects of the WVA have been defined by policy and functional considerations of the CWPPRA; therefore, user-specific modifications may be necessary if the WVA is used for other purposes.

The WVA is a modification of the Habitat Evaluation Procedures (HEP) developed by the U.S. Fish and Wildlife Service (U.S. Fish and Wildlife Service 1980). HEP is widely used by the Fish and Wildlife Service and other Federal and State agencies in evaluating the impacts of development projects on fish and wildlife resources. A notable difference exists between the two methodologies, however, in that HEP generally uses a species-oriented approach, whereas the WVA utilizes a community approach.

The WVA has been developed for application to the following coastal Louisiana wetland types: fresh marsh (including intermediate marsh), brackish marsh, saline marsh, and cypress-tupelo swamp. Future reference in this document to "wetland" or "wetland type" refers to one or more of those four communities.

The WVA operates under the assumption that optimal conditions for fish and wildlife habitat within a given coastal wetland type can be characterized, and that existing or predicted conditions can be compared to that optimum to provide an index of habitat quality. Habitat quality is estimated or expressed through the use of a mathematical model developed specifically for each wetland type. Each model consists of:

1. a list of variables that are considered important in characterizing fish and wildlife habitat:
 - a. V_1 --percent of wetland covered by emergent vegetation,
 - b. V_2 --percent open water dominated by submerged aquatic vegetation,

- c. V₃--marsh edge and interspersion,
- d. V₄--percent open water less than or equal to 1.5 feet deep,
- e. V₅--salinity, and
- f. V₆--aquatic organism access.

2. a Suitability Index graph for each variable, which defines the assumed relationship between habitat quality (Suitability Index) and different variable values; and

3. a mathematical formula that combines the Suitability Index for each variable into a single value for wetland habitat quality; that single value is referred to as the Habitat Suitability Index, or HSI.

The Wetland Value Assessment models have been developed for determining the suitability of Louisiana coastal wetlands for providing resting, foraging, breeding, and nursery habitat to a diverse assemblage of fish and wildlife species. Models have been designed to function at a community level and therefore attempt to define an optimum combination of habitat conditions for all fish and wildlife species utilizing a given marsh type over a year or longer.

The output of each model (the HSI) is assumed to have a linear relationship with the suitability of a coastal wetland system in providing fish and wildlife habitat.

A comprehensive discussion of the WVA methodology is presented in Appendix E.

Designs and Cost Analysis.

During the plan formulation process, each of the Task Force agencies assumed responsibility for developing designs, and estimates of costs and benefits for a number of candidate projects. The cost estimates for the projects were to be itemized as follows:

- 1. Construction Cost
- 2. Contingencies
- 3. Engineering and Design
- 4. Supervision and Administration
- 5. Supervision and Inspection (Construction Contract)
- 6. Real Estate
- 7. Operation and Maintenance
- 8. Monitoring

In addition, each lead agency was to provide a detailed itemized construction cost estimate for each project. These estimates are shown in Appendix C.

An Engineering Work Group was established by the Planning and Evaluation Subcommittee, with each Federal agency and the State of

Louisiana represented. The work group reviewed each estimate for accuracy and consistency.

When reviewing the construction cost estimates, the work group verified that each project feature had an associated cost and that the quantity and unit price for those items were reasonable. In addition, the work group reviewed the design of the projects to determine whether the method of construction was appropriate and the design feasible.

All of the projects were assigned a contingency of 25 percent because detailed information such as soil borings, surveys, and--to a major extent--hydrologic data were not available, in addition to allowing for variations in unit prices.

Engineering and design, supervision and administration, and supervision and inspection costs were reviewed for consistency, but ordinarily were not changed from what was presented by the lead agency.

Economic Analysis.

The Breaux-Johnston Act directed the Task Force to develop a prioritized list of wetland projects "based on the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing coastal wetlands, taking into account the quality of such coastal wetlands." The Task Force satisfied this requirement through the integration of a traditional time-value analysis of life-cycle project costs and other economic impacts and an evaluation of wetlands benefits using a community-based version of the U.S. Fish and Wildlife Service's Habitat Evaluation Procedure. The product of these two analyses was an Average Annual Cost per Average Annual Habitat Unit figure for each project, which was used as the primary ranking criterion. The method permits incremental analysis of varying scales of investment and also accommodates the varying salinity types and habitat quality characteristics of project wetland outputs.

The major inputs to the cost effectiveness analysis are the products of the lead Task Force agencies and the Engineering and Environmental Work Groups. The various plans were refined into estimates of annual implementation costs and annual Habitat Units (HU).

Implementation costs were used to calculate the economic and financial costs of each wetland project. Financial costs chiefly consist of the resources needed to plan, design, construct, operate, and maintain the project. These are the costs, when adjusted for inflation, that the Task Force uses in budgeting decisions. The economic costs include, in addition to the financial cost, monetary indirect impacts of the plans not accounted for in the implementation costs. Examples would include impacts on dredging in nearby commercial navigation channels, effects on water supplies, and effects on nearby facilities and structures not reflected in right-of-way and acquisition costs.

The stream of economic costs for each project was brought to present value and annualized at the current discount rate, based on a 20-year project life. Beneficial environmental outputs were annualized at a zero discount rate and expressed as average annual habitat units (AAHU). These data were then used to rank each plan

based on cost per AAHU produced. Annual economic costs were also calculated on a per acre basis. Financial costs were adjusted to account for projected levels of inflation and used to monitor overall budgeting and any future cost escalations in accordance with rules established by the Task Force.

Following the review by the Engineering Work Group, costs were expressed as first costs, fully funded costs, present worth costs, and average annual costs. The Average Annual Cost per Average Annual Habitat Unit criterion was derived by dividing the average annual cost for each wetland project by the Average Annual Habitat Units (AAHU) for each wetland project. The average annual costs figures are based on 1996 price levels, a discount rate of 7.63 percent, and a project life of 20 years. The fully funded cost estimates developed for each project were used to determine how many projects could be supported by the funds expected to be available in fiscal year 1996. The fully funded cost estimates include operation and maintenance and other compensated financial costs.

Table 12
Candidate Projects for the 5th Priority Project List

Project No.	Project Name	Average Annual Acres (AAA)	Average Annual Habitat Units (AAHU's)	Average Annual Cost (\$ X 1,000)	Average Annual Cost/AAHU (\$/AAHU)	Fully Funded Cost (\$ X 1,000)	Sponsoring Agency
PPO-2a/g	Lake Borgne Shore Protection	199	131	601.9	4,595	6,194	NRCS
XPO-69	Marsh Creation at Bayou Chevee	165	121	285.6	2,360	2,891	USACE
XPO-54	Bonnet Carré Outfall Management	97	66	948.5	14,371	15,248	USACE
XBS-17	Wills Point Marsh Creation	287	157	451.2	2,874	4,528	USACE
XMR-10b	Channel Armor Caps West	273	357	444.1	1,244	4,552	USACE
PMR-8	Pass a Loutre Sediment Mining	132	125	178.7	1,430	1,816	USACE
PBA-201	Bayou Lafourche Siphon (w/Cutoff Structure)	925	1,069	2,434.0	2,277	23,670	EPA
PBA-20	Bayou Lafourche Siphon Inc (w/o Cutoff Structure)	225	499	2,285.0	4,579	22,256	EPA
PBA-48a	Siphon at Myrtle Grove	588	527	1,467.7	2,785	15,526	NMFS
XBA-73	Jesuit Bend Marsh Creation	171	97	522.1	5,382	5,213	USACE
BA3c/PBA-12b	Naomi Outfall Mgmt and BBMW East Bank Prot	473	676	339.2	502	4,090	NRCS
PBA-12b	Barataria Bay WW East Bank Prot.	114	129	220.2	1,707	2,303	NRCS
BA-3c	Naomi Outfall Management	633	379	129.0	340	1,744	NRCS
TE-10/XTE-49	Grand Bayou/GIWW Freshwater Diversion	1,609	771	397.1	515	5,136	USFWS
PTE-15b(iv)	New Cut/East Trinity Island Rst	541	384	2,067.0	5,383	19,080	EPA
PTE-15b(iv) 1	Barrier Island Rst, New Cut Only (Inc 1)	541	118	598.0	5,068	5,861	EPA
PTE-15b(iv) 2	Barrier Island Rst, w/o Ship Shoal	541	384	1,298.0	3,380	12,022	EPA
PTE-26a	Bayou DeCade Hydrologic Restoration	42	74	350.1	4,731	4,154	NRCS
XTE-45	Timballier Barrier Island Restoration	300	230	657.2	2,857	6,582	NMFS
XTE-69	Marsh Creation near Falgout Canal	194	122	429.7	3,522	4,310	USACE
XAT-3	Point Chevreuil Shore Protection	38	16	228.1	14,256	2,559	NRCS
XTV-30	Vegetative Plantings in the Chenier Plain	362	246	170.8	694	1,829	NRCS
PTV-10/XTV-25	Oaks/Avery Canal Hydrologic Restoration	12	118	216.2	1,832	2,673	NRCS
PTV-19	Little Vermillion Bay Sediment Trapping	238	149	86.1	578	940	NMFS
TV-5/7	Marsh Island Hydrologic Rst and Marsh Creation Inc 3	233	452	366.1	810	4,056	USACE
XME-22	Pecan Island Terracing	221	240	217.3	905	2,220	NMFS
XME-29	Freshwater Bayou Bank Stabilization	262	248	392.2	1,581	3,999	NRCS
CS-16	Black Bayou Diversion	440	592	863.0	1,458	9,051	USACE
CS-11b	Sweet Lake/Willow Lake Hydrologic Restoration	126	261	455.9	1,747	4,763	NRCS
XCS-46	North Line Canal Structure (dropped by lead agency)						USACE/USFWS
BA-17b	Siphon at Home Place/ City Price (dropped: not feasible)						NMFS

EPA: Environmental Protection Agency
 NMFS: National Marine Fisheries Service
 NRCS: Natural Resources Conservation Service (formerly Soil Conservation Service)
 USFWS: US Fish and Wildlife Service
 USACE: US Army Corps of Engineers